

2700 AF



**In The United States Patent and Trademark Office
On Appeal From The Examiner To The Board
of Patent Appeals and Interferences**

In re Application of: Mark B. Whipple
Serial No.: 09/534,915
Filing Date: March 23, 2000
Examiner: Adnan M. Mirza
Confirmation No. 9969
Group Art Unit: 2141
Title: System and Method for Managing Event
Publication and Subscription

MAIL STOP: APPEAL BRIEF - PATENTS
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

**CERTIFICATE OF MAILING
EXPRESS MAIL NO. EV 323315788 US**

I hereby certify that this communication is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" under 37 C.F.R. § 1.10 on the date indicated below and is addressed to Mail Stop: Appeal Brief - Patents, Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

Willie Jiles

Willie Jiles

Date: February 7, 2005

Dear Sir:

Appeal Brief

Appellant has appealed to the Board of Patent Appeals and Interferences (the "Board") from the decision of the Examiner mailed September 8, 2004, finally rejecting all pending Claims 1-56. Appellant filed a Notice of Appeal on December 6, 2004. Appellant respectfully submits this Appeal Brief with the statutory fee of \$500.00.

02/10/2005 HDEMESS1 00000014 09534915

01 FC:1402

500.00 DP

Real Party in Interest

This Application is currently owned by i2 Technologies US, Inc., as indicated by:
an Assignment recorded on March 23, 2000, from the inventors to i2 Technologies, Inc., in the Assignment Records of the United States Patent and Trademark Office ("PTO") at Reel 010699, Frames 0326-0327; and

an Assignment recorded on July 31, 2001, from i2 Technologies, Inc. to i2 Technologies US, Inc., in the Assignment Records of the PTO at Reel 012032, Frames 0238-0249.

Related Appeals and Interferences

No known appeals, interferences, or judicial proceedings are related to or will directly affect, be directly affected by, or have a bearing on the Board's decision regarding this Appeal.

Status of Claims

Claims 1-56 are pending in this Application, stand rejected pursuant to a Final Office Action mailed September 8, 2004 (the "Final Office Action"), and are all presented for appeal. All pending claims are shown in Appendix A, along with an indication of the status of those claims.

Status of Amendments

All amendments submitted by Appellant have been entered by the Examiner prior to the mailing of the Final Office Action.

Summary of Claimed Subject Matter

In certain embodiments, as illustrated in FIGURE 1, the present invention includes an example system 100 that includes external event publisher/consumers (EPCs) 102-112 in communication with an event manager 114 in a computer process 101. External EPCs 102-112 may subscribe to event manager 114 for notification of an event. When the event occurs, event manager 114 publishes the event to subscribing external EPCs 102-112. External EPCs 102-112 may also produce events that require notification. Event manager 114 monitors external EPCs 102-112 for the occurrence of the events. EPCs 116-120 internal to computer process 101 may also subscribe and publish to event manager 114. (*See* Page 8, Lines 10-23)¹

Specifically, external EPCs 102-112 may include a variety of external entities. For example, external EPC 104 may be a modem, and external EPC 106 may be a factory machine. Factory machine 106 may subscribe to event manager 114 to be notified of the ringing of modem 104, for example. Event manager 114 then monitors, or listens, to modem 104 for the event. When modem 104 rings, event manager 114 notifies factory machine 106 of the event. As another example, external EPC 108 may be a database. External EPC 102 may subscribe to event manager 114 for a change in a database entry in database 108. As another example, external EPC 110 may be an input file and external EPC 112 may be an output file. Output file 112 may subscribe to the notification of the writing of a purchase order file to input file 110, which was not possible with known approaches to publication and subscription. Note that system 100 allows for simple effective multiple heterogeneous event exchange among a variety of external entities, which was unavailable with known approaches to publication and subscription. (*See* Page 8, Line 24— Page 9, Line 11)

In an embodiment of the present invention, event manager 114 includes a logical event manager (LEM) 122 in communication with a physical event manager 124, which is, in turn, in communication with external EPCs 102-112. Physical event manager 124 monitors external EPCs 102-112 for signals, translates the signals to logical events, and communicates the logical events to logical event manager 122 for further processing. Physical event

¹ All citations in the “Summary of the Claimed Subject Matter” section of this Appeal Brief refer to Appellant’s patent application as filed on March 17, 2000.

manager 124 includes listener-senders (LSs) 126-134, which in turn include mappers 136-144. Listener-senders 126-134 monitor external EPCs 102-112 for signals and translate the signals to logical events using mappers 136-144. A listener-sender 132 may even search a directory of database 108 for a file, a process unavailable with known approaches to publication and subscription. Each listener-sender may monitor a specific type of device. For example, listener-sender 134 monitors files 110 and 112, while listener-sender 128 monitors serial devices modem 104 and factory machine 106. The mapper receives a specific type of signal from a specific type of external entity, extracts data from the event, and translates it into a logical event. The mapper may translate the signal to the logical event by, for example, performing a direct correlation or by using a lookup table that contains the correlation between the logical event and the signal. After the signals are translated into logical events, listener-senders 126-134 communicate the logical events to logical event manager 122. Logical event manager 122 receives the logical events and determines which internal and/or external EPCs are subscribing to the logical events. (*See* Page 9, Line 12–Page 10, Line 10)

Logical event manager 122 publishes the logical events to physical event manager 124, which translates them to signals using the appropriate mapper and sends them to the subscribing external EPCs 102-112 using the appropriate listener-sender. Alternatively, logical event manager 122 may receive logical events from and publish logical events to internal EPCs 116-120. (*See* Page 10, Lines 11-30)

FIGURE 2 is a flowchart demonstrating one embodiment of a method for managing event publication and subscription of the present invention. The flowchart is used to describe an exemplary embodiment where an event of interest, a “start machine” event can be produced by either of two mechanisms: a call to modem 104 connected to a telephone, or the insertion of a value into database 108. Two external entities act upon the occurrence of the start machine event: factory machine 106 starts operation, and input file 112 records the occurrence of the start machine event. All four external entities 104, 106, 108, and 112 converse using different protocols. (*See* Page 10, Lines 18-30)

The method begins at step 202, where computer process 101 instantiates event manager 114. Computer process 101 defines a set of physical events, for example, listener-senders 126, 128, 132, and 134, where each physical event corresponds to an external entity and a set of mappers. At step 204, the event producers modem 104 and database 108 are defined. Either modem 104 or database 108 can produce a native signal for the start machine event. For example, modem 104 may produce a native signal. Physical event listener-sender 128, for example, a serial port accessor, may interpret the native signal. Mapper 138, for example, a modem string mapper, maps the signal to the equivalent start machine logical event. Alternatively, database 108 may produce a native signal, for example, a trigger. Physical event listener-sender 132 interprets the native signal. Mapper 142 maps the signal to the start machine logical event. (*See* Page 10, Line 31– Page 11, Line 15)

At step 206, event consumers factory machine 106 and output file 112 are defined. Factory machine 106 may receive a signal via its native mechanism, for example, a serial port. Listener-sender 128 and mapper 140, for example, machine serial codes, may interpret the start machine logical event and translate and transmit the event to factory machine 106. Output file 112 may receive a signal via its native mechanism, for example, a computer disk write. Listener-sender 134, for example, a file accessor, and mapper 144 may interpret the start machine logical event and translate and transmit the event to output file 112. (*See* Page 11, Lines 16-27)

At step 208, listener-senders 128 and 134 subscribe to the start machine logical event on behalf of factory machine 106 and output file 112, respectively. At step 210, listener-senders monitor event producers modem 104 and database 108, respectively. Listener-senders 128 and 132 use native protocols to listen for signals from external entities modem 104 and database 108, respectively. (*See* Page 11, Line 28– Page 12, Line 3)

At step 212, an event producer produces a native signal. In one embodiment, event producer modem 104 receives a ring indication and signals listener-sender 128 via modem strings on the serial port. At step 214, mapper 138 translates the modem string to a start machine logical event. At step 216, the logical event is published to logical event manager 122. At step 218, logical event manager 122 publishes logical event to physical event

manager 124. Logical event manager 122 recognizes that there are logical event subscriptions from listener-senders 128 and 134 and publishes the logical events to listener-senders 128 and 134. At step 220, listener-senders publish signals to event consumers. Mapper 140 translates the start machine logical event to protocol data understood by factory machine 106, and listener-sender 128 transmits the protocol data to factory machine 106. Similarly, mapper 144 translates the start machine logical event to a log file entry, and listener-sender 134 inserts data into output file 112, and the method terminates. (*See* Page 12, Lines 4–23)

In another embodiment, at step 212, event producer database 108 produces a ‘trigger’ upon the insertion of data into a table. The trigger is understood by listener-sender 132. At step 214, mapper 142 translates the trigger notification to a start machine logical event. At step 216, the logical event is published to logical event manager 122. At step 218, logical event manager 122 publishes the logical event to physical event manager 124. Logical event manager 122 recognizes that there are logical event subscriptions from listener-senders 128 and 134 and publishes the logical events to listener-senders 128 and 134. At step 220, listener-senders publish signals to event consumers. Mapper 140 translates the start machine logical event to protocol data understood by factory machine 106, and listener-sender 128 transmits the protocol data to factory machine 106. Similarly, mapper 144 translates the start machine logical event to a log file entry. and listener-sender 134 inserts data into output file 112, and the method terminates. (*See* Page 12, Line 24– Page 13, Line 11)

Ground of Rejection to be Reviewed on Appeal

Are Claims 1-56 patentable under 35 U.S.C. § 103(a) over the Examiner's proposed combination of U.S. Patent 6,226,693 to Chow et al. ("*Chow*") with U.S. Patent 5,778,230 to Wimble et al. ("*Wimble*")?

Grouping of Claims

Appellant has made an effort to group claims to reduce the burden on the Board. In the Argument section of this Appeal Brief, where appropriate, Appellant presents arguments as to why particular claims subject to a ground of rejection are separately patentable from other claims subject to the same ground of rejection. To reduce the number of groups and thereby reduce the burden on the Board, Appellant does not argue individually every claim that recites patentable distinctions over the references cited by the Examiner, particularly in light of the clear allowability of Appellant's independent claims. The claims of each group provided below may be deemed to stand or fall together for purposes of this Appeal.

Appellant has concluded that the claims may be grouped together as follows:

With regard to the ground of rejection identified above, the claims subject to the ground of rejection may be grouped together as follows for purposes of this Appeal:

1. Group 1 may include independent Claims 1, 9, 13, and 19 and dependent Claims 2-8, 10-12, and 14-18; and
2. Group 2 may include independent Claims 23, 34, 45, and 56 and dependent Claims 24-33, 35-44, and 46-55.

Argument

The rejection of Claims 1-56 under 35 U.S.C. § 103(a) as being unpatentable over the proposed *Chow-Wimble* combination is improper and should be reversed by the Board.

The Claims are Patentable over the Proposed *Chow-Wimble* Combination

A. Overview

Claims 1-56 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the Examiner's proposed *Chow-Wimble* combination. A copy of *Chow* is attached as Appendix B, and a copy of *Wimble* is attached as Appendix C. Appellant respectfully submits that the Examiner's proposed *Chow-Wimble* combination fails to support the obviousness rejections of Claims 1-56. Appellant respectfully submits that these rejections are therefore improper and should be reversed by the Board.

B. Standard

The question raised under 35 U.S.C. § 103 is whether the prior art taken as a whole would suggest the claimed invention taken as a whole to one of ordinary skill in the art at the time of the invention. *See* 35 U.S.C. § 103(a). Accordingly, even if all elements of a claim are disclosed in various prior art references, which is certainly not the case here as discussed below, the claimed invention taken as a whole cannot be said to be obvious without some reason given in the prior art why one of ordinary skill at the time of the invention would have been prompted to modify the teachings of a reference or combine the teachings of multiple references to arrive at the claimed invention.

The M.P.E.P. sets forth the strict legal standard for establishing a *prima facie* case of obviousness based on modification or combination of prior art references. "To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references where combined) must teach or suggest all the claim limitations." M.P.E.P. § 2142, 2143. The teaching, suggestion, or motivation for the modification or combination and the reasonable expectation of success must both be found in the prior art and

cannot be based on an applicant's disclosure. *See Id.* (citations omitted). "Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either explicitly or implicitly in the references themselves or in the knowledge generally available to one of ordinary skill in the art" at the time of the invention. M.P.E.P. § 2143.01. Even the fact that references *can* be modified or combined does not render the resultant modification or combination obvious unless the prior art teaches or suggests the desirability of the modification or combination. *See Id.* (citations omitted). Moreover, "To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. All words in a claim must be considered in judging the patentability of that claim against the prior art." M.P.E.P. § 2143.03 (citations omitted).

The governing Federal Circuit case law makes this strict legal standard even more clear.² According to the Federal Circuit, "a showing of a suggestion, teaching, or motivation to combine or modify prior art references is an essential component of an obviousness holding." *In re Sang-Su Lee*, 277 F.3d 1338, 1343, 61 U.S.P.Q.2d 1430, 1433 (Fed. Cir. 2002) (quoting *Brown & Williamson Tobacco Corp. v. Philip Morris Inc.*, 229 F.3d 1120, 1124-25, 56 U.S.P.Q.2d 1456, 1459 (Fed. Cir. 2000)). "Evidence of a suggestion, teaching, or motivation . . . may flow from the prior art references themselves, the knowledge of one of ordinary skill in the art, or, in some cases, the nature of the problem to be solved." *In re Dembiczak*, 175 F.3d 994, 999, 50 U.S.P.Q.2d 1614, 1617 (Fed. Cir. 1999). However, the "range of sources available . . . does not diminish the requirement for actual evidence." *Id.* Although a prior art device "may be capable of being modified to run the way the apparatus is claimed, there must be a suggestion or motivation in the reference to do so." *In re Mills*, 916 F.2d at 682, 16 U.S.P.Q.2d at 1432. *See also In re Rouffet*, 149 F.3d 1350, 1357, 47 U.S.P.Q.2d 1453, 1457-58 (Fed. Cir. 1998) (holding a *prima facie* case of obviousness not made where the combination of the references taught every element of the claimed invention but did not provide a motivation to combine); *In Re Jones*, 958 F.2d 347, 351, 21 U.S.P.Q.2d 1941, 1944 (Fed. Cir. 1992) ("Conspicuously missing from this record is any evidence, other than the PTO's speculation (if that can be called evidence) that one of ordinary skill in the

² Note M.P.E.P. 2145 X.C. ("The Federal Circuit has produced a number of decisions overturning obviousness rejections due to a lack of suggestion in the prior art of the desirability of combining references.").

herbicidal art would have been motivated to make the modification of the prior art salts necessary to arrive at” the claimed invention.). Even a determination that it would have been obvious to one of ordinary skill in the art at the time of the invention to try the proposed modification or combination is not sufficient to establish a *prima facie* case of obviousness. *See In re Fine*, 837 F.2d 1071, 1075, 5 U.S.P.Q.2d 1596, 1599 (Fed. Cir. 1988).

In addition, the M.P.E.P. and the Federal Circuit repeatedly warn against using an applicant’s disclosure as a blueprint to reconstruct the claimed invention. For example, the M.P.E.P. states, “The tendency to resort to ‘hindsight’ based upon applicant’s disclosure is often difficult to avoid due to the very nature of the examination process. However, impermissible hindsight must be avoided and the legal conclusion must be reached on the basis of the facts gleaned from the prior art.” M.P.E.P. § 2142. The governing Federal Circuit cases are equally clear. “A critical step in analyzing the patentability of claims pursuant to [35 U.S.C. § 103] is casting the mind back to the time of invention, to consider the thinking of one of ordinary skill in the art, guided only by the prior art references and the then-accepted wisdom in the field. . . . Close adherence to this methodology is especially important in cases where the very ease with which the invention can be understood may prompt one ‘to fall victim to the insidious effect of a hindsight syndrome wherein that which only the invention taught is used against its teacher.’” *In re Kotzab*, 217 F.3d 1365, 1369, 55 U.S.P.Q.2d 1313, 1316 (Fed. Cir. 2000) (citations omitted). In *In re Kotzab*, the Federal Circuit noted that to prevent the use of hindsight based on the invention to defeat patentability of the invention, the court requires the Examiner to show a sufficient motivation in the prior art to combine the references that allegedly create the case of obviousness. *See id.* *See also, e.g., Grain Processing Corp. v. American Maize-Products*, 840 F.2d 902, 907, 5 U.S.P.Q.2d 1788, 1792 (Fed. Cir. 1988). Similarly, in *In re Dembiczak*, the Federal Circuit reversed a finding of obviousness by the Board, explaining that the required evidence of such a teaching, suggestion, or motivation is essential to avoid impermissible hindsight reconstruction of an applicant’s invention:

Our case law makes clear that the best defense against the subtle but powerful attraction of hind-sight obviousness analysis is *rigorous application of the requirement for a showing of the teaching or motivation to combine prior art references*. Combining prior art references without evidence of such a suggestion, teaching, or motivation simply takes the inventor’s disclosure as a

blueprint for piecing together the prior art to defeat patentability—the essence of hindsight.

175 F.3d at 999, 50 U.S.P.Q.2d at 1617 (emphasis added) (citations omitted).

C. Chow

Chow discloses an event manager that uses a mapping table to map platform dependent physical events to logical events to allow platform independent callbacks. (Figure 7; Column 6, Lines 50-57; Column 7, Lines 5-8; Column 7, Line 62 – Column 8, Line 46) As illustrated in Figure 7, *Chow* discloses a single event manager that maps physical events to logical events.

D. Wimble

Wimble discloses a debugging system that includes a Logical to Physical Manager that maps a physical event into a set of logical events. (Abstract; Column 1, Lines 15-18; Column 10, Line 63-Column 11, Line 2; Column 11, Lines 24-29; Column 12, Lines 46-51) As illustrated in Figure 13, *Wimble* discloses a single Logical to Physical Manager that is in communication with a single primitive event object. (*See also* Column 10, Lines 43-44)

E. Group 1 (Claims 1-22)

Claims 1-22 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the proposed *Chow-Wimble* combination. Appellant respectfully submits that these claims are clearly patentable over the proposed *Chow-Wimble* combination. Appellant respectfully submits that these rejections are improper and should be reversed by the Board.

Claims 1-22 are separately patentable from every other claim subject to the same ground of rejection. These claims recite limitations that are substantially different from limitations recited in the claims of other groups and cannot be properly grouped with the claims of other groups for purposes of this Appeal.

1. The Proposed *Chow-Wimble* Combination Fails to Disclose, Teach, or Suggest Various Limitations Recited in Appellant's Claims

Chow, even when considered in combination with *Wimble*, fails to disclose, teach, or suggest various limitations recited in Appellant's claims. As an example, Appellant discusses Claim 1.

First, *Chow*, *Wimble*, and the proposed *Chow-Wimble* combination fail to disclose, teach, or suggest ***a physical event manager in communication with the logical event manager***, as recited in independent Claim 1.

Chow merely discloses an event manager that uses a mapping table to map platform dependent physical events to logical events to allow platform independent callbacks. (Figure 7; Column 6, Lines 50-57; Column 7, Lines 5-8; Column 7, Line 62 – Column 8, Line 46) *Chow* contains no disclosure, teaching, or suggestion of a logical event manager operating in cooperation with a ***separate*** physical event manager as recited in independent Claim 1. The Examiner even acknowledges that the ***single*** event manager of *Chow* can be interpreted as "the hub of all the event management objects namely logical and physical events." (Final Office Action, Page 2) Thus, *Chow* is wholly inadequate as a reference against Claim 1.

Wimble fails to make up for the clear deficiencies of *Chow*. As clearly illustrated in Figure 13, *Wimble* merely discloses a Logical to Physical Manager that is in communication with a single primitive event object. *Wimble* contains no disclosure, teaching, or suggestion of a logical event manager operating in cooperation with a ***separate*** physical event manager as recited in independent Claim 1. Thus, *Wimble* is also wholly inadequate as a reference against Claim 1.

Consequently, even assuming for the sake of argument that there was the required teaching, suggestion, or motivation to combine *Chow* with *Wimble* in the manner the Examiner proposes, the proposed *Chow-Wimble* combination would still fail to disclose, teach, or suggest ***a physical event manager in communication with the logical event manager***, as recited in independent Claim 1.

Second, *Chow*, *Wimble*, and the proposed *Chow-Wimble* combination fail to disclose, teach, or suggest a system for managing event publication and subscription ***for event producer-consumers of heterogeneous types using a plurality of mappers each specific to a particular type of event producer-consumer***, as recited in independent Claim 1.

In the Final Office Action, the Examiner argues that Column 9, Lines 16-19 of *Chow* provides such teaching:

As to applicant's argument *Chow* disclosed the objects can register actions for a specific logical event on a given target object with event manager. These actions can be procedure/method calls or scripts. Events are designed in an object oriented fashion and the user can subclass the abstract action object and create new custom objects (col. 9, lines 16-19).

(Final Office Action, Page 10)

Even assuming for the sake of argument that the Examiner's summary of Column 9, Lines 16-19 of *Chow* is accurate, that portion of *Chow*, and all other portions of *Chow*, still fail to disclose, teach, or suggest a system for managing event publication and subscription ***for event producer-consumers of heterogeneous types using a plurality of mappers each specific to a particular type of event producer-consumer***, as recited in independent Claim 1.

Moreover, the Examiner admits in the Final Office Action that *Chow* fails to disclose that a "physical event manager comprises: a first mapper specific to the first type of the first event producer-consumer and operable to translate between the logical event manager and the first event producer-consumer; and a second mapper specific to the second type of the second event producer-consumer and operable to translate between the logical event manager and the second event producer-consumer." (See Final Office Action, Pages 2-3) Accordingly, it would seem that even the Examiner would admit that *Chow* fails to disclose, teach, or suggest a system for managing event publication and subscription ***for event producer-consumers of heterogeneous types using a plurality of mappers each specific to a particular type of event producer-consumer***, as recited in independent Claim 1. Thus, *Chow* is wholly inadequate as a reference against Claim 1.

Wimble fails to make up for the clear deficiencies of *Chow*. *Wimble* discloses a debugging system that includes a Logical to Physical Manager that maps a physical event into a set of logical events. (Abstract; Column 1, Lines 15-18; Column 10, Line 63-Column 11, Line 2; Column 11, Lines 24-29; Column 12, Lines 46-51) As clearly illustrated in Figure 13, *Wimble* merely discloses a Logical to Physical Manager that is in communication with a single primitive event object. (See also Column 10, Lines 43-44) Thus, the Logical to Physical Manager performs only one type of mapping for the single primitive event object. *Wimble* has absolutely no need for ***mappers each specific to a particular type of event producer-consumer***. Thus, *Wimble* fails to disclose, teach, or suggest a system for managing event publication and subscription ***for event producer-consumers of heterogeneous types using a plurality of mappers each specific to a particular type of event producer-consumer***, as recited in independent Claim 1. *Wimble* even fails to disclose, teach, or suggest ***heterogeneous types of event producer-consumers***. Thus, *Wimble* is also wholly inadequate as a reference against Claim 1.

Consequently, even assuming for the sake of argument that there was the required teaching, suggestion, or motivation to combine *Chow* with *Wimble* in the manner the Examiner proposes, the proposed *Chow-Wimble* combination would still fail to disclose, teach, or suggest a system for managing event publication and subscription ***for event producer-consumers of heterogeneous types using a plurality of mappers each specific to a particular type of event producer-consumer***, as recited in independent Claim 1.

Third, *Chow*, *Wimble*, and the proposed *Chow-Wimble* combination fail to disclose, teach, or suggest a physical event manager that is in communication with a logical event manager, and comprises “***a first mapper specific to the first type of the first event producer-consumer*** and operable to translate between the logical event manager and the first event producer-consumer” and “***a second mapper specific to the second type of the second event producer-consumer*** and operable to translate between the logical event manager and the second event producer-consumer,” where ***the first and the second event producer-consumers are of heterogeneous types as recited*** in independent Claim 1.

As discussed above, the Examiner admits in the Final Office Action that *Chow* fails to disclose a “physical event manager comprises: a first mapper specific to the first type of the first event producer-consumer and operable to translate between the logical event manager and the first event producer-consumer; and a second mapper specific to the second type of the second event producer-consumer and operable to translate between the logical event manager and the second event producer-consumer.” (See Final Office Action, Pages 2-3) Thus, *Chow* is wholly inadequate as a reference against Claim 1.

In the Final Office Action, the Examiner argues that Column 10, Lines 63-67 and Column 11, Lines 1-2 of *Wimble* provides such teaching.

As to applicant’s argument *Wimble* disclosed each time a primitive physical event is detected, the state manager uses the logical to physical manager to map the physical event into a set of logical events (col. 12, lines 40-54). ... The logical to physical Manager 158 is responsible for managing the bi-directional mapping between multiple logical primitive events and a unique physical event (col. 10, lines 63-67 and col. 11, lines 1-2).

(Final Office Action, Page 11)

Appellant respectfully disagrees. As discussed above, *Wimble* merely discloses a Logical to Physical Manager that is in communication with a single primitive event object, and thus performs only one type of mapping for the single primitive event object. *Wimble* even fails to disclose, teach, or suggest heterogeneous types of event producer-consumers. Accordingly, *Wimble* has absolutely no need for a ***first mapper and a second mapper each specific to a different type of event producer-consumer*** as recited in independent Claim 1. Thus, *Wimble* is also wholly inadequate as a reference against Claim 1.

Consequently, even assuming for the sake of argument that there was the required teaching, suggestion, or motivation to combine *Chow* with *Wimble* in the manner the Examiner proposes, the proposed *Chow-Wimble* combination would still fail to disclose, teach, or suggest a physical event manager that is in communication with a logical event manager, and that comprises “***a first mapper specific to the first type of the first event producer-consumer*** and operable to translate between the logical event manager and the first event producer-consumer” and “***a second mapper specific to the second type of the second***

event producer-consumer and operable to translate between the logical event manager and the second event producer-consumer,” where *the first and the second event producer-consumers are of heterogeneous types* as recited in independent Claim 1.

Thus, even assuming for the sake of argument that there was the required teaching, suggestion, or motivation to combine *Chow* with *Wimble* in the manner the Examiner proposes, the proposed *Chow-Wimble* combination would still fail to disclose, teach, or suggest the limitations specifically recited in independent Claim 1.

2. The Proposed *Chow-Wimble* Combination is Improper

Appellant also respectfully submits that the Examiner’s proposed *Chow-Wimble* combination is improper at least because the Examiner has not demonstrated the requisite teaching, suggestion, or motivation in the cited references, or in the knowledge generally available to one of ordinary skill in the art at the time of invention, to combine or modify these references in the manner the Examiner proposes. The rejections are improper and should be reversed for at least this additional reason.

With regard to the proposed *Chow-Wimble* combination, the Examiner stated that the proposed combination would “increase the functionality of the system” and “make the user more independent” are entirely insufficient in light of the strict M.P.E.P. and Federal Circuit guidelines discussed at length above and during prosecution. As discussed above, as clearly illustrated in Figure 13, *Wimble* merely discloses a Logical to Physical Manager that is in communication with a single primitive event object and thus performs only one type of mapping. (See Column 10, Lines 43-44) Accordingly, *Wimble* has absolutely no need for a first mapper and a second mapper as recited in Claim 1, and thus *Wimble* clearly provides no teaching, suggestion, or motivation for the proposed combination. If anything, *Wimble* teaches away from the proposed combination. *Chow* also clearly fails to provide any such teaching, suggestion, or motivation.

Given the above-discussed flaws in the Examiner’s reasoning, Appellant respectfully submits that the Examiner has not provided a proper teaching, suggestion, or motivation to combine or modify *Chow* with the *Wimble* reference in the manner the Examiner proposes, as

is required by the M.P.E.P. and governing Federal Circuit case law. Appellant's claims are allowable for at least this additional reason.

3. Conclusion with Respect to Group 1

For at least these reasons, the proposed *Chow-Wimble* combination fails to support the obviousness rejection of independent Claim 1 and its dependent claims. For at least analogous reasons, the proposed *Chow-Wimble* combination fails to support the obviousness rejection of independent Claims 9, 13, and 19 and their dependent claims. These claims are therefore patentable over the proposed *Chow-Wimble* combination. Appellant respectfully submits that these rejections are improper and should be reversed by the Board.

F. Group 2 (Claims 23-56)

Claims 23-56 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the proposed *Chow-Wimble* combination. Appellant respectfully submits that these claims are clearly patentable over proposed *Chow-Wimble* combination. Thus, Appellant respectfully submits that these rejections are improper and should be reversed by the Board.

Claims 23-56 are separately patentable from every other claim subject to the same ground of rejection. These claims recite limitations that are substantially different from limitations recited in the claims of other groups and cannot be properly grouped with the claims of other groups for purposes of this Appeal.

1. The Proposed *Chow-Wimble* Combination Fails to Disclose, Teach, or Suggest Various Limitations Recited in Appellant's Claims

Chow, even when considered in combination with *Wimble*, fails to disclose, teach, or suggest various limitations recited in Appellant's claims. As an example, Appellant discusses Claim 23.

First, *Chow*, *Wimble*, and the proposed *Chow-Wimble* combination fail to disclose, teach, or suggest ***a physical event manager in communication with the logical event manager***, as recited in independent Claim 23.

As discussed above, neither *Chow* nor *Wimble* contains any disclosure, teaching, or suggestion of a logical event manager operating in cooperation with a *separate* physical event manager as recited in independent Claim 23.

Consequently, even assuming for the sake of argument that there was the required teaching, suggestion, or motivation to combine *Chow* with *Wimble* in the manner the Examiner proposes, the proposed *Chow-Wimble* combination would still fail to disclose, teach, or suggest *a physical event manager in communication with the logical event manager*, as recited in independent Claim 23.

Second, *Chow*, *Wimble*, and the proposed *Chow-Wimble* combination fail to disclose, teach, or suggest “a plurality of event producer-consumers, each event producer-consumer being of a particular type, *the plurality of event producer-consumers being of heterogeneous types*,” as recited in independent Claim 23.

In the Final Office Action, the Examiner argues that Column 3, Lines 16-24 and Column 6, Lines 51-57 of *Chow* provides such teaching.

As to applicant's argument *Chow* disclosed an event manager object is created for handling events from different environments. Events are registered for the objects. An action is triggered using the event object manager in response to detecting an event occurring in the data processing system, wherein event occurring in an environment are efficiently handled (col. 3, lines 16-24). *Chow* also disclosed the present invention isolates platform specific event recognition in an event management object, also called an event manager. The rest of the system logic or application is coded for logical event generated by the event manager. The event manager is employed to map platform specific events to the platform-independent logical events. As a result, the rest of the system code becomes independent of the platform except for the event manager (col. 6, lines 51-57).

(Final Office Action, Pages 11-12)

Even assuming for the sake of argument that the Examiner's summary of Column 3, Lines 16-24 and Column 6, Lines 51-57 of *Chow* is accurate, that portion of *Chow*, and all other portions of *Chow*, still fail to disclose, teach, or suggest “a plurality of event producer-

consumers, each event producer-consumer being of a particular type, ***the plurality of event producer-consumers being of heterogeneous types***,” as recited in independent Claim 23. Thus, *Chow* is wholly inadequate as a reference against Claim 23.

Moreover, *Wimble* fails to make up for the clear deficiencies of *Chow* with respect to independent Claim 23. As discussed above, *Wimble* fails to disclose, teach, or suggest ***heterogeneous types of event producer-consumers***. Thus, *Wimble* necessarily fails to disclose, teach, or suggest a physical event manager in communication “a plurality of event producer-consumers, each event producer-consumer being of a particular type, ***the plurality of event producer-consumers being of heterogeneous types***,” as recited in independent Claim 23. *Wimble* is also wholly inadequate as a reference against Claim 23.

Consequently, even assuming for the sake of argument that there was the required teaching, suggestion, or motivation to combine *Chow* with *Wimble* in the manner the Examiner proposes, the proposed *Chow-Wimble* combination would still fail to disclose, teach, or suggest “a plurality of event producer-consumers, each event producer-consumer being of a particular type, ***the plurality of event producer-consumers being of heterogeneous types***,” as recited in independent Claim 23.

Third, for the reasons discussed above, *Chow*, *Wimble*, and the proposed *Chow-Wimble* combination fail to disclose, teach, or suggest “***a plurality of mappers each corresponding to a particular type of event producer-consumer***,” where each mapper is operable to “translate the particular type of signal received from the corresponding particular type of event producer-consumer into a logical event for communication to the logical event manager” and to “translate the logical event received from the logical event manager into a particular type of signal indicative of a physical event for communication to the corresponding particular type of event producer-consumer,” as recited in independent Claim 23.

Thus, even assuming for the sake of argument that there was the required teaching, suggestion, or motivation to combine *Chow* with *Wimble* as the Examiner proposes, the

proposed *Chow-Wimble* combination would still fail to disclose, teach, or suggest the limitations specifically recited in independent Claim 23.

2. The Proposed *Chow-Wimble* Combination is Improper

As discussed above, the requisite teaching, suggestion, or motivation in the prior art to combine *Chow* with *Wimble* in the manner the Examiner proposes is entirely lacking.

3. Conclusion with Respect to Group 2

For at least these reasons, the proposed *Chow-Wimble* combination fails to support the obviousness rejection of independent Claim 23 and its dependent claims. For at least analogous reasons, the proposed *Chow-Wimble* combination fails to support the obviousness rejection of independent Claims 34, 45, and 56 and their dependent claims. These claims are therefore patentable over the proposed *Chow-Wimble* combination. Appellant respectfully submits that these rejections are improper and should be reversed by the Board.

Conclusion

Appellant has demonstrated that, for at least the foregoing reasons, the present invention, as claimed, is clearly patentably distinguishable over the prior art cited by the Examiner. Therefore, Appellant respectfully requests the Board to reverse the final rejection of the Examiner and instruct the Examiner to issue a Notice of Allowance of all pending claims.

Appellant has enclosed a check in the amount of \$500.00 for this Appeal Brief. Although Appellant believes no other fees are due, the Commissioner is authorized to charge any additional fees and credit any overpayments to Deposit Account No. 02-0384 of Baker Botts L.L.P.

Respectfully submitted,

BAKER BOTTS L.L.P.
Attorneys for Appellant



Christopher W. Kennerly
Reg. No. 40,675

Date: February 7, 2005

Customer Number: **05073**

A.1

Appendix A

1. (Previously Presented) A system for managing event publication and subscription for event producer-consumers of heterogeneous types using a plurality of mappers each specific to a particular type of event producer-consumer, the system comprising:

a logical event manager; and

a physical event manager in communication with the logical event manager, a first event producer-consumer of a first type, and a second event producer-consumer of a second type, the first and second event producer-consumers being of heterogeneous types, wherein the physical event manager comprises:

a first mapper specific to the first type of the first event producer-consumer and operable to translate between the logical event manager and the first event producer-consumer; and

a second mapper specific to the second type of the second event producer-consumer and operable to translate between the logical event manager and the second event producer-consumer.

2. (Previously Presented) The system of Claim 1, further comprising a listener-sender having the first mapper and in communication with the logical event manager and the first and second event producer-consumers.

3. (Previously Presented) The system of Claim 1, wherein the first mapper is operable to translate a signal occurring at the first event producer-consumer to a logical event for the logical event manager.

4. (Previously Presented) The system of Claim 1, wherein the first mapper is operable to translate a logical event occurring at the logical event manager to a signal for the first event producer-consumer.



A.2

5. (Previously Presented) The system of Claim 1, wherein the first event producer-consumer is operable to subscribe to a logical event managed by the logical event manager.

6. (Previously Presented) The system of Claim 1, wherein the logical event manager is operable to publish a signal to the first event producer-consumer.

7. (Previously Presented) The system of Claim 1, wherein the first event producer-consumer is operable to communicate a signal to the logical event manager.

8. (Previously Presented) The system of Claim 1, wherein the physical event manager is operable to monitor the first event producer-consumer for a signal.

9. (Previously Presented) A method for managing event publication and subscription for event consumers of heterogeneous types using a plurality of mappers each specific to a particular type of event consumer, the method comprising:

receiving a logical event from an event producer by a logical event manager;

communicating the logical event from the logical event manager to a physical event manager;

translating the logical event to a first signal by the physical event manager using a first mapper specific to a first type of event consumer;

translating the logical event to a second signal by the physical event manager using a second mapper specific to a second type of event consumer, the first and second event consumers being of heterogeneous types;

publishing the first signal to a first event consumer of the first type; and

publishing the second signal to a second event consumer of the second type, the first and second event consumers being of heterogeneous types.

10. (Previously Presented) The method of Claim 9, further comprising communicating a subscription for a logical event from the first event consumer to the physical event manager.

A.3

11. (Previously Presented) The method of Claim 9, further comprising:
communicating a first subscription for a logical event from the first event consumer to the physical event manager; and
translating the first subscription into a first logical subscription using the first mapper.

12. (Previously Presented) The method of Claim 9, further comprising instantiating the physical event manager by establishing the first mapper and the second mapper, wherein the first mapper is associated with the logical event and the first event consumer and the second mapper is associated with the logical event and the second event consumer.

13. (Previously Presented) A method for managing event publication and subscription for event producers of heterogeneous types using a plurality of mappers each specific to a particular type of event producer, the method comprising:

receiving a first signal from a first event producer of a first type using a physical event manager;

receiving a second signal from a second event producer of a second type using the physical event manager, the first and second event producers being of heterogeneous types;

translating the first signal to a first logical event using a first mapper specific to the first type of the first event producer;

translating the second signal to a second logical event using a second mapper specific to the second type of the second event producer;

communicating the first logical event from the first mapper to a logical event manager; and

communicating the second logical event from the second mapper to the logical event manager.

14. (Previously Presented) The method of Claim 13, further comprising communicating a subscription for the first logical event from a first event consumer to the physical event manager.

A.4

15. (Previously Presented) The method of Claim 14, further comprising:
communicating a first subscription for a logical event from the first event consumer to the physical event manager; and
translating the first subscription into a first logical subscription using the first mapper.

16. (Previously Presented) The method of Claim 13, further comprising communicating the first logical event from the logical event manager to a first event consumer.

17. (Previously Presented) The method of Claim 13, further comprising monitoring the first event producer for the first signal.

18. (Previously Presented) The method of Claim 13, further comprising instantiating the physical event manager by establishing the first mapper, wherein the first mapper is associated with the first logical event and the first event producer.

19. (Previously Presented) A method for managing event publication and subscription for event producer-consumers of heterogeneous types using a plurality of mappers each specific to a particular type of event producer-consumer, the method comprising:

receiving a first signal from an event producer of a first event producer-consumer type using a physical event manager;

translating the first signal to a logical event using a first mapper specific to the first event producer-consumer type;

communicating the logical event to a logical event manager;

communicating the logical event to the physical event manager;

translating the logical event to second signal using a second mapper specific to a second event producer-consumer type; and

communicating the second signal to an event consumer of the second event producer-consumer type, the event producer and the event consumer being of heterogeneous event producer-consumer types.

20. (Previously Presented) The method of Claim 19, further comprising communicating a subscription for the logical event from the event consumer to the physical event manager.

21. (Previously Presented) The method of Claim 19, further comprising monitoring the event producer for the first signal.

22. (Previously Presented) The method of Claim 19, further comprising instantiating the physical event manager by establishing the first mapper, wherein the first mapper is associated with the logical event and the event producer.

23. (Previously Presented) A system for managing event publication and subscription for event producer-consumers of heterogeneous types using a plurality of mappers each specific to a particular type of event producer-consumer, comprising:

- a logical event manager; and

- a physical event manager in communication with the logical event manager and with a plurality of event producer-consumers, each event producer-consumer being of a particular type, the plurality of event producer-consumers being of heterogeneous types;

- the physical event manager comprising a plurality of mappers each corresponding to a particular type of event producer-consumer and operable to:

- for incoming physical events:

- receive a particular type of signal indicative of a physical event from the corresponding particular type of event producer-consumer;

- translate the particular type of signal received from the corresponding particular type of event producer-consumer into a logical event for communication to the logical event manager;

- for outgoing physical events:

- receive a logical event from the logical event manager;

- translate the logical event received from the logical event manager into a particular type of signal indicative of a physical event for communication to the corresponding particular type of event producer-consumer.

A.6

24. (Previously Presented) The system of Claim 23, wherein the physical event manager is operable use the mappers to translate a single logical event into:

a first particular type of signal for communication to a corresponding first particular type of event producer-consumer; and

a second particular type of signal for communication to a corresponding second particular type of event producer-consumer.

25. (Previously Presented) The system of Claim 24, further comprising one or more listener-senders each comprising one or more mappers, each listener-sender monitoring the one or more event producer-consumers corresponding to the one or more mappers of the listener-sender.

26. (Previously Presented) The system of Claim 24, wherein the logical event manager is operable to allow each event producer-consumer to subscribe to one or more logical events managed by the logical event manager.

27. (Previously Presented) The system of Claim 26, wherein the logical event manager is further operable to publish a logical event for communication to each event producer-consumer that has subscribed to the logical event, for each event producer-consumer that has subscribed to the logical event the logical event being translated using the corresponding mapper and communicated in the form of the corresponding particular type of signal.

28. (Previously Presented) The system of Claim 24, wherein:
the system allows for heterogeneous event exchange among a plurality of event producer-consumers each supporting a different native protocol for communicating signals indicative of physical events;

no event producer-consumer needs to have knowledge of any other event producer-consumer for event exchange with the other event producer-consumer; and

no event producer-consumer needs to have knowledge of the native protocol for any other event producer-consumer for event exchange with the other event producer-consumer.

A.7

29. (Previously Presented) The system of Claim 24, wherein:
the event producer-consumers are external event producer-consumers;
the logical event manager is in communication with a plurality of internal event-producer-consumers; and
the logical event manager is further operable to:
for incoming physical events, communicate the logical event to one or more internal event-producer-consumers;
for outgoing physical events, receive the logical event from an internal event-producer-consumer.

30. (Previously Presented) The system of Claim 24, wherein:
a first event-producer-consumer comprises a first machine with a corresponding first mapper within the physical event manager and a corresponding first native protocol for communicating signals with the physical event manager;
a second event-producer-consumer comprises a second machine with a corresponding second mapper within the physical event manager and a corresponding second native protocol for communicating signals with the physical event manager; and
the physical event manager is operable to:
receive from the first machine a first signal in the first native protocol indicative of a physical event associated with the first machine;
use a first mapper corresponding to the first machine to translate the first signal received from the first machine in the first native protocol into a start machine logical event for communication to the logical event manager; and
use a second mapper corresponding to the second machine to translate the start machine logical event received from the logical event manager into a second signal in the second native protocol indicative of the start machine logical event for communication to the second machine, the second machine operable to start in response to receiving the second signal.

31. (Previously Presented) The system of Claim 30, wherein the first and second native protocols are different protocols.

32. (Previously Presented) The system of Claim 24, wherein:

a first event-producer-consumer comprises a first data store with a corresponding first mapper within the physical event manager and a corresponding first native protocol for communicating signals with the physical event manager;

a second event-producer-consumer comprises a second data store with a corresponding second mapper within the physical event manager and a corresponding second native protocol for communicating signals with the physical event manager; and

the physical event manager is operable to:

receive from the first data store a first signal in the first native protocol indicative of a physical event associated with the first data store;

use a first mapper corresponding to the first data store to translate the first signal received from the first data store in the first native protocol into a store data logical event for communication to the logical event manager; and

use a second mapper corresponding to the second data store to translate the store data logical event received from the logical event manager into a second signal in the second native protocol indicative of the store data logical event for communication to the second data store, the second machine operable to store data in response to receiving the second signal.

33. (Previously Presented) The system of Claim 32, wherein the first and second native protocols are different protocols.

34. (Previously Presented) A method for managing event publication and subscription for event producer-consumers of heterogeneous types using a plurality of mappers each specific to a particular type of event producer-consumer, comprising:

establishing communication between a physical event manager and a logical event manager;

establishing communication between the physical event manager and a plurality of event producer-consumers, each event producer-consumer being of a particular type, the plurality of event producer-consumers being of heterogeneous types; and

using a plurality of mappers within the physical event manager, each corresponding to a particular type of event producer-consumer and operable to:

for incoming physical events:

receive a particular type of signal indicative of a physical event from the corresponding particular type of event producer-consumer;

translate the particular type of signal received from the corresponding particular type of event producer-consumer into a logical event for communication to the logical event manager;

for outgoing physical events:

receive a logical event from the logical event manager;

translate the logical event received from the logical event manager into a particular type of signal indicative of a physical event for communication to the corresponding particular type of event producer-consumer.

35. (Previously Presented) The system of Claim 34, further comprising using the mappers of the physical event manager to translate a single logical event into:

a first particular type of signal for communication to a corresponding first particular type of event producer-consumer; and

a second particular type of signal for communication to a corresponding second particular type of event producer-consumer.

36. (Previously Presented) The method of Claim 34, further comprising using one or more listener-senders each comprising one or more mappers, each listener-sender monitoring the one or more event producer-consumers corresponding to the one or more mappers of the listener-sender.

37. (Previously Presented) The method of Claim 34, further comprising using the logical event manager to allow each event producer-consumer to subscribe to one or more logical events managed by the logical event manager.

38. (Previously Presented) The method of Claim 37, further comprising using the logical event manager to publish a logical event for communication to each event producer-consumer that has subscribed to the logical event, for each event producer-consumer that has subscribed to the logical event the logical event being translated using the corresponding mapper and communicated in the form of the corresponding particular type of signal.

39. (Previously Presented) The method of Claim 34, wherein:
the method allows for heterogeneous event exchange among a plurality of event producer-consumers each supporting a different native protocol for communicating signals indicative of physical events;
no event producer-consumer needs to have knowledge of any other event producer-consumer for event exchange with the other event producer-consumer; and
no event producer-consumer needs to have knowledge of the native protocol for any other event producer-consumer for event exchange with the other event producer-consumer.

40. (Previously Presented) The method of Claim 34, wherein:
the event producer-consumers are external event producer-consumers;
the logical event manager is in communication with a plurality of internal event-producer-consumers; and
the method further comprises using the logical event manager to:
for incoming physical events, communicate the logical event to one or more internal event-producer-consumers;
for outgoing physical events, receive the logical event from an internal event-producer-consumer.

41. (Previously Presented) The method of Claim 34, wherein:
a first event-producer-consumer comprises a first machine with a corresponding first mapper within the physical event manager and a corresponding first native protocol for communicating signals with the physical event manager;
a second event-producer-consumer comprises a second machine with a corresponding second mapper within the physical event manager and a corresponding second native protocol for communicating signals with the physical event manager; and
the method further comprises using the physical event manager to:
receive from the first machine a first signal in the first native protocol indicative of a physical event associated with the first machine;
use a first mapper corresponding to the first machine to translate the first signal received from the first machine in the first native protocol into a start machine logical event for communication to the logical event manager; and
use a second mapper corresponding to the second machine to translate the start machine logical event received from the logical event manager into a second signal in the second native protocol indicative of the start machine logical event for communication to the second machine, the second machine operable to start in response to receiving the second signal.

42. (Previously Presented) The method of Claim 41, wherein the first and second native protocols are different protocols.

43. (Previously Presented) The method of Claim 34, wherein:

a first event-producer-consumer comprises a first data store with a corresponding first mapper within the physical event manager and a corresponding first native protocol for communicating signals with the physical event manager;

a second event-producer-consumer comprises a second data store with a corresponding second mapper within the physical event manager and a corresponding second native protocol for communicating signals with the physical event manager; and

the method further comprises using the physical event manager to:

receive from the first data store a first signal in the first native protocol indicative of a physical event associated with the first data store;

use a first mapper corresponding to the first data store to translate the first signal received from the first data store in the first native protocol into a store data logical event for communication to the logical event manager; and

use a second mapper corresponding to the second data store to translate the store data logical event received from the logical event manager into a second signal in the second native protocol indicative of the store data logical event for communication to the second data store, the second machine operable to store data in response to receiving the second signal.

44. (Previously Presented) The method of Claim 43, wherein the first and second native protocols are different protocols.

45. (Previously Presented) Software for managing event publication and subscription for event producer-consumers of heterogeneous types using a plurality of mappers each specific to a particular type of event producer-consumer, the software embodied in computer-readable media and when executed operable to:

- establish communication between a physical event manager and a logical event manager;

- establish communication between the physical event manager and a plurality of event producer-consumers, each event producer-consumer being of a particular type, the plurality of event producer-consumers being of heterogeneous types; and

- use a plurality of mappers within the physical event manager, each corresponding to a particular type of event producer-consumer and operable to:

 - for incoming physical events:

 - receive a particular type of signal indicative of a physical event from the corresponding particular type of event producer-consumer;

 - translate the particular type of signal received from the corresponding particular type of event producer-consumer into a logical event for communication to the logical event manager;

 - for outgoing physical events:

 - receive a logical event from the logical event manager;

 - translate the logical event received from the logical event manager into a particular type of signal indicative of a physical event for communication to the corresponding particular type of event producer-consumer.

46. (Previously Presented) The software of Claim 45, further operable to use the mappers of the physical event manager to translate a single logical event into:

- a first particular type of signal for communication to a corresponding first particular type of event producer-consumer; and

- a second particular type of signal for communication to a corresponding second particular type of event producer-consumer.

47. (Previously Presented) The software of Claim 45, further operable to use one or more listener-senders each comprising one or more mappers, each listener-sender monitoring the one or more event producer-consumers corresponding to the one or more mappers of the listener-sender.

48. (Previously Presented) The software of Claim 45, further operable to use the logical event manager to allow each event producer-consumer to subscribe to one or more logical events managed by the logical event manager.

49. (Previously Presented) The software of Claim 48, further operable to use the logical event manager to publish a logical event for communication to each event producer-consumer that has subscribed to the logical event, for each event producer-consumer that has subscribed to the logical event the logical event being translated using the corresponding mapper and communicated in the form of the corresponding particular type of signal.

50. (Previously Presented) The software of Claim 45, wherein:
the software allows for heterogeneous event exchange among a plurality of event producer-consumers each supporting a different native protocol for communicating signals indicative of physical events;

no event producer-consumer needs to have knowledge of any other event producer-consumer for event exchange with the other event producer-consumer; and

no event producer-consumer needs to have knowledge of the native protocol for any other event producer-consumer for event exchange with the other event producer-consumer.

51. (Previously Presented) The software of Claim 45, wherein:
the event producer-consumers are external event producer-consumers;
the logical event manager is in communication with a plurality of internal event-producer-consumers; and
the software is further operable to use the logical event manager to:
for incoming physical events, communicate the logical event to one or more internal event-producer-consumers;
for outgoing physical events, receive the logical event from an internal event-producer-consumer.

52. (Previously Presented) The software of Claim 45, wherein:
a first event-producer-consumer comprises a first machine with a corresponding first mapper within the physical event manager and a corresponding first native protocol for communicating signals with the physical event manager;
a second event-producer-consumer comprises a second machine with a corresponding second mapper within the physical event manager and a corresponding second native protocol for communicating signals with the physical event manager; and
the software is further operable to use the physical event manager to:
receive from the first machine a first signal in the first native protocol indicative of a physical event associated with the first machine;
use a first mapper corresponding to the first machine to translate the first signal received from the first machine in the first native protocol into a start machine logical event for communication to the logical event manager; and
use a second mapper corresponding to the second machine to translate the start machine logical event received from the logical event manager into a second signal in the second native protocol indicative of the start machine logical event for communication to the second machine, the second machine operable to start in response to receiving the second signal.

53. (Previously Presented) The software of Claim 52, wherein the first and second native protocols are different protocols.

54. (Previously Presented) The software of Claim 45, wherein:

a first event-producer-consumer comprises a first data store with a corresponding first mapper within the physical event manager and a corresponding first native protocol for communicating signals with the physical event manager;

a second event-producer-consumer comprises a second data store with a corresponding second mapper within the physical event manager and a corresponding second native protocol for communicating signals with the physical event manager; and

the software is further operable to use the physical event manager to:

receive from the first data store a first signal in the first native protocol indicative of a physical event associated with the first data store;

use a first mapper corresponding to the first data store to translate the first signal received from the first data store in the first native protocol into a store data logical event for communication to the logical event manager; and

use a second mapper corresponding to the second data store to translate the store data logical event received from the logical event manager into a second signal in the second native protocol indicative of the store data logical event for communication to the second data store, the second machine operable to store data in response to receiving the second signal.

55. (Previously Presented) The software of Claim 54, wherein the first and second native protocols are different protocols.

56. (Previously Presented) A system for managing event publication and subscription for event producer-consumers of heterogeneous types using a plurality of mappers each specific to a particular type of event producer-consumer, comprising:

first means for receiving and communicating logical events; and

second means, in communication with the first means and with a plurality of event producer-consumers, each event producer-consumer being of a particular type, the plurality of event producer-consumers being of heterogeneous types, for translating signals received from event producer-consumers into logical events for communication to the first means and for translating logical events received from the first means into signals for communication event producer-consumers;

the second means comprising a plurality of mapping means each corresponding to a particular type of event producer-consumer and each for:

for incoming physical events:

receiving a particular type of signal indicative of a physical event from the corresponding particular type of event producer-consumer;

translating the particular type of signal received from the corresponding particular type of event producer-consumer into a logical event for communication to the first means;

for outgoing physical events:

receiving a logical event from the first means;

translating the logical event received from the first means into a particular type of signal indicative of a physical event for communication to the corresponding particular type of event producer-consumer.